REVISION: *01*

ENGINEERING DATA LIST

* HISTORY *

DATE :	DATA TECH :	ORGN SYMBOL :	PR NR :	APPLICATION:	PAGE
14AUG00	SOH	LGMPM		C-5	1 OF 1

CAGE:	MANUFACTURER NAME:	REFERENCE NR:	NOUN :	NSN :
17576	B.F. GOODRICH	4G52417-113A	LATCH.	1620003561678

CAGE	DRAWING NUMBER	REV	NR SHEETS	NR CARDS	FURN CODE	DIST CODE	NOUN	REQUIREMENTS
98897	4G52417 /	L	0002	0000	S		LATCH.	
98897	LAC 0701 /		0000	0000	S		MACHINING SPEC.	
98897	DS 30001 /		0000	0000	S		DIMENSION INSPEC.	
98897	4G52418 /	D	0001	0000	S		FORGING.	
98897	4G53434 /	D	0001	0000	S		BEARING.	
98747	96C014 /		0001	0000	S		ECO	
98747	OO-ALC/LGMPM /		0004	0000	S		ENGRG. DATA REQTS. (ATCH "A")	

STANDARD ENGINEERING TEXT

ENGINEERING DATA LIST REMARKS

FURNISHED METHOD CODE LEGEND:

C - CLASSIFIED DOCUMENT.
S - FURNISHED WITH SOLICITATION.
M - STABLE BASE DRAWING REQUIRED;
X - DATA SUPPLIED (NOT IN EDCARS).
R - FURNISHED BY PCD UPON REQUEST.
P - PARTIAL DOCUMENT FURNISHED.
V - VENDOR DRAWING;
G - GOV'T DOCUMENT.
O - OTHERS, CONTRACTOR MUST ACQUIRE.
A - DATA NOT

REV:	ENGINEERING DATA REQUIREMENTS *(ATTACHMENT "A")*

NOTE: MILITARY SPECIFICATIONS I/STANDARDS WILL NOT BE FURNISHED IN THE BID SET.

1. THE FOLLOWING INSTRUCTIONS ARE FURNISHED FOR THE MANUFACTURE OF

LATCH - UPPER DRAG BRACE ASSY. STRUT NLG. ASSY. OF.

2. PART NUMBER	3. NATIONAL STOCK NUMBER
4G52417-113A	1620 00 356 1678

4. THE FOLLOWING SPECIFICATIONS/STANDARDS, ETC., WILL BE USED IN LIEU OF THE DATA INDICATED. THE SUPERSEDED DATA WILL NOT BE FURNISHED UNLESS SO INDICATED.

a. Identify to meet drawing requirements and MIL-STD-130 with the following notes. Serial number shall be vibropeened, or steel stamped, in 0.09" letters 0.004" - 0.007" deep in the location indicated. If the drawing does not indicate a location, OO-ALC/LILE will provide S/N location instructions. Serialization of item shall be accomplished as follows: The serialization will begin with the CAGE of the contractor named on the contract, followed by a dash and the two (2) digit year of manufacture, followed by a dash and a sequentially unique three (3) digit number. A contractor who receives numerous intermittent contracts will start serialization of item with the next number in sequence of the prior contract. If a contract produces more than 1000 items, the serial number should appear like this: "S/N 98747-95-001"

b. Machine to meet drswing specifications per LAC 0701, in lieu of DS 30003.

c. Magnetic particle inspection per ASTM E1444, in lieu of MIL-I-6868. Use fluorescent type, full wave direct current (FWDC), and wet continuous method. With the following acceptance/rejection criteria: NO DEFECTS ALLOWED. The intent of NO DEFECTS ALLOWED is that the inspection is conducted at the required sensitivity level and there shall be no indications allowed. The inspector performing the inspection shall be level II certified, with the inspection procedure developed by a level III, as specified in NAS-410.

d. Shot peen per SAE AMS-S-13165, in lieu of STP 51-501.

e. Heat treat, normalize, and anneal per SAE AMS-H-6875, in lieu of STP 54-006

f. Prior to assembly detail metallic parts shall be cleaned to remove all heat treat scale, dissimilar metal contamination, forming and cutting residue, and other shop soils. Parts shall be handled and transported in such manner as will ensure that the required cleanliness and physical characteristics, and properties are preserved. As a final cleaning operation prior to capping or closure, components shall be given a final cleaning by flushing all surfaces which will be in contact with hydraulic fluid, with a cleaning solution which is compatible with the system being cleaned, and in compliance with existing environmental standards.

5. Drilling, reaming, and honing to meet drawing specifications, using best shop procedures and the following notes in lieu of STP 51-401.

a. High speed steel (HSS) drills shall be used to drill corrosion resistant steels.

b. HSS reamers will be used for rough reaming, and final reaming of steels heat treated below 200 KSI. Carbide or premium grade hi-speed tipped reamers will be used for rough reaming of steels heat treated above 200 KSI.

c. Honing stones shall be of 150 to 500 alumium oxide grit with a medium-hard bond and preferabily a multi-head stone. Heads with steel shoes or wipers shall not be used.

d. Drilling shall never be used as a final machining operation. A minimum of 0.015 inch on diameter shall be left for final reaming. Holes shall be finished by reaming or boring. When jigs, fixtures, or bushings are not used for drilling holes larger than 1/4 inch, the holes will be piloted with a center drill. Chemical, electrical, or electrochemical hole producing methods shall not be used as a final surface producing method without prior approval from OO-ALC/LILE.

PREPARED BY	SYMBOL	DATE
ORIN HATCH	LGMPM	29 Sep 00

e. Rough reaming, the reamer length shall be as short as consistent with required penetration. Final reaming, the diametral cut shall produce a hole that meets the requirements of the engineering drawing.

f. Honing shall be used as a final operation where a surface finish better than 125 roughness height ratio is required, and connot be produced by other means.

g. Carbide drills can be operated at higher speeds that HSS drills, but must be used with caution. Thay must not be used in dull or chiped condition.

6. Install bushings per the following, in lieu of STP 56-108, Type I.

a. The bushing installation shall be accomplished in such a manner as to avoid damage to the finish on the I.D. of the housing into which the bushing is installed, or the finish on the O.D. of the bushing. Forced installation of sub-zero installation, such as the use of a press or hammer is not permitted, and is not acceptable. A small non-metallec hammer may be used to tap the bushing into alignment with the housing bore, or to seat the bushing.

b. Prior to bushing installation, the parts and housing bore shall be cleaned with a solvent to remove all contamination.

c. Liquid nitrogen shall be used for all sub-zero installations unless some other sub-zero coolant is specified, and approved by OO-ALC/LILE engineering. The soak time of the bushing in the liquid nitrogen shall be sufficient to allow the bushing to reach the same temperature as the coolant.

d. The bushing shall be installed into the housing immediatedly upon removal form the coolant with an absolute minimum lost time. Trial runs shall be accomplished as necessary to minimize installation time, which should be in the order of about seven (7) seconds maximum.

e. It may occasionally be necessary to heat the housing into which the bushing is to be installed, in addition to sub-zero cooling of the bushing. Detail parts in process, which do not have paint or sealant or other organic material applied prior to heating, the parts shall be heated by the use of radiant heat techniques, such as thermal blankets, infrared lamps etc; to the maximum temperature of 250 F. Temperature measuring devices shall be used to monitor heat and shall be located on areas of the part expected to reach maximum temperature. No scaling, oxidation, or corrosion shall be permitted.

f. The shrunken part shall be installed into the housing bore which has received a wet coat of MIL-P-8585, zinc chromate primer which has been brush applied. The primer shall be applied to the bushing outer surface and the housing bore prior to installation, so as to insure complete sealing of gaps between the housing bore and the installed bushing as evidenced by extruded primer around the entire periphery of both ends of the bushing.

7. Penetrant inspect per ASTM E1417, Type I, Method B or C, Level 3 or 4, with the following acceptance/rejection criteria: NO DEFECTS ALLOWED. The intent of NO DEFECTS ALLOWED is that the inspection is conducted at the required sensitivity level and there shall be no indications allowed. The inspector performing the inspectionl shall be level II certified, with the inspection procedure developed by a level III as specified in NAS-410.

8. Use material 300M per AMS 6257, in lieu of STM 05-501 (300 Tricent).

REV:	ENGINEERING DATA REQUIREMENTS CONTINUATION SHEET *(ATTACHMENT "A")*

PART NUMBER	NATIONAL STOCK NUMBER
4G52417-113A	1620 00 356 1678

9. Finish per the following in lieu of DS30000, and finish codes C, CC, D, 17, 54, 74-74.

   a. Cadmium plate per QQ-P-416, Class 2, Type II, (Ref.DWG 4G53434) (code C)

   b. Cadmium plate per MIL-STD-870, Class 3, Type II. (Ref. DWG 4G52417) (code C)

   c. Cadmium plate per MIL-STD-1500, Class 3, Type II. Ref. DWG 4G52417) (code CC)

   d. Chromium plate per MIL-STD-1501, Type I, Class 1. (code D)

   e. Primer wash is not required. (code 17)

   f. One coat of epoxy primer per MIL-P-85582, Type I, Class 2. (code 54). Alternate, One coat of epoxy primer per MIL-P-23377, Type I.

   g. Two coats of top coat per MIL-PRF-85285, Type I. (color white, No. 17925 per FED-STD-595). (code 74-74)

10. The required forgings will be procured from the qualified forging source using the original certified forging procedures and dies.

   a. Prior to contract award, the detail part bidder will provide certification, from the forging source to the government, that the certified dies and forging procedures are available and that the forging source has an agreement with the detail part bidder to provide forgings for his use in the event that he is the successful bidder.

   b. Prior to production, forging lot qualification will be accomplished as specified on the forging drawing, MIL-F-7190, grade A. The contractor will assure that this is or has been accomplished by the forging source and will submit certified documentation of accomplishment to the government.

11. FORGING SOURCE, CONTROL AND LOCATION OF DIES:

   a. Forging drawing: 4G52418-993A Lockheed GA. CAGE 98897

   b. Control of forging: Minassco Texas Div.
   Highway 157 & Pipeline Rd.
   Fort Worth, TX 76039

   c. Location of forging: Unknown. Die number. Unknown.

PREPARED BY	SYMBOL	DATE
ORIN HATCH	LGMPM	29 Sep 00

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PART NUMBER	NATIONAL STOCK NUMBER
4G52417-113A	1620 00 356 1678

12. Material Review Board disposition:

    a. OO-ALC/LILE system engineering retains all rights to review and accept MRB dispositions prior to shipment of discrepant item. All deviations, minor and major, from the engineering drawing package will be submitted for MRB disposition.

    b. Prior to contract award, the contractor will certify to the government in writing full compliance with manuals, specifications, and standards called out and required for the manufacture of this contracted landing gear component/ assembly. The contractor is responsible to completely search all required documents and fully understand the necessary requirements to manufacture the stated item. Any questions can be forwarded to this offece OO-ALC/LILE

13. Any surface ground/machined after heat treat, shall be inspected for burns per MIL-STD-867, in lieu of STP 54-006. Grinding shall be per MIL-STD-866.

14. After contract award the successfull bidder shall provide a copy of the processing documentation (routing documents and process specifications) to LILE for final review before production begins.

15. The following specifications are not required for the manufacture of this item.

    a. Fatigue test X995, static test X999, and DS 5025.

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SOURCE QUALIFICATION STATEMENT
(PL 98-525, Section 2319)

SECTION A. ITEM IDENTIFICATION

1. STOCK NUMBER (NSN):1620-00-356-1678

2. PART NUMBER (P/N):4G52417-113A

3. NOUN: Latch-Upper drag Brace Assy

4. APPLICATION: C-5

SECTION B.

JUSTIFICATION FOR ESTABLISHING A QUALIFICATION REQUIREMENT AND REASON WHY QUALIFICATION REQUIREMENT MUST BE DEMONSTRATED PRIOR TO ANY CONTRACT AWARD

1. The manufacture, tolerances, material availability and interpretation of engineering data along with the special skills associated with forging, machining and processing of high strength steel forgings can result in product structural or durability degradations if not properly applied.

2. The bidder's ability to interpret the engineering drawings, specifications and the execution of the qualification requirements specified herein are necessary to verify the structural integrity as well as form, fit, and function of the item being procured.

3. Failure to procure these items from a fully qualified source can degrade the mission capability of the respective aircraft and/or cause the loss of aircraft and crew.

4. Completion of the specified pre-contract award qualification requirements will assure the government that the offeror is capable of producing the item in compliance with the applicable technical specification/data and within the schedule and economic constraints of the government's contracts. There are sufficient technical and schedule risks, which can only be minimized by a completion of the requirements prior to contract award.

SOURCE QUALIFICATION REQUIREMENTS
(PL98-525, SECTION 2319)

STOCK NR (NSN)1620-00-356-1678 PART NUMBER (P/N)4G52417-113A
NOUN: Latch-Upper drag Brace Assy AIRCRAFT:C-5

SECTION C

QUALIFICATION REQUIREMENTS THAT MUST BE SATISFIED TO BECOME A QUALIFIED SOURCE:

1. Because of the need for uninterrupted item support to military aircraft systems while keeping with the requirements of PL 98-525, the current acquisition need not and generally will not be delayed to provide an offeror an opportunity to qualify. Normal acquisition practices at OO-ALC should preclude the denial of opportunity to any interested offeror.

2. The offeror must provide a pre-contract award qualification article, which meets the requirements of the engineering drawings, material specifications, and process specifications. However, successful completion of the qualification testing does not guarantee any contract award. If the offeror is deemed qualified and awarded the contract, a post-contract award first ariticle exhibit may be required to verify production capability.

3. The qualification article will be subjected to form, fit, and function verification as well as required testing to assure compliance with data list and other applicable procurement criteria. The qualification article shall demonstrate full compatibility and comparability with existing parts.

4. The required materials will be procured from a qualified source and shall meet the requirements of their respective specifications. The offeror will assure that the supplier has accomplished this and shall submit certified documentation of accomplishment of the above requirements to the purchaser along with the pre-contract award qualification article.

5. The required forgings shall be procured from the qualified forging source using the original certified forging procedures and dies. Forging material and lot qualifications shall be accomplished as required in the specified forging drawing, P/N 4G52418-993A and specification SAE AMS-F-7190. The offeror shall assure that this is or has been accomplished by the forging source and will submit certified documentation of accomplishment of the above requirements to the government along with the pre-contract award qualification article.

6. The qualification article once submitted will become subject to such testing as deemed necessary by the U.S. Government to prove that the article meets all dimensional, processing and functional requirements. Such testing may result in the destruction of the article. Following completion of necessary testing and evaluation, the article no matter what its condition shall be returned to the contractor or disposed of at his discretion and direction whether it was found acceptable or not.

7. Form verification: The U.S. Government's Quality Verification Center (QVC) will be used to insure compliance with the dimensional requirements of the article. Material and processing compliance will also be verified as required.

8. Fit/function verification: Existing components and government test stands and fixtures will be utilized to verify physical interface and functional performance of articles.

9. Testing for material and process compliance.

(a) Material analysis
(b) Heat treat
(c) Grinding
(d) Plating
(e) Finish
(f) Grain flow
(g) Other

SOURCE QUALIFICATION REQUIREMENTS
(PL98-525, SECTION 2319)

STOCK NR (NSN)1620-00-356-1678 PART NUMBER (P/N)4G52417-113A
NOUN: Latch-Upper drag Brace Assy AIRCRAFT:C-5

10. Remarks:

a. Organic verification capabilities exist at OO-ALC.

b. Testing requirements outside organic capabilities will be contracted out.

11. The estimated cost of government testing and evaluation is $5000.

12. Maximum time for testing of the qualification article will not exceed 30 days from receipt at testing agency.

SECTION D

QUALIFICATION WAIVER REQUIREMENTS.

1. An offerer who has had previous experience in the manufacture and qualification of items, which can be correlated with this product, may apply to the design control authority at OO-ALC for a waiver of the above stated qualification requirements.

a. The qualification waiver criteria utilized by the design control authority to perform a qualification analysis are available upon request. The qualification waiver criteria may be used as a guide in preparing the offerer's written input to the design control authority.

b. The burden of proof for written inputs is on the offerer. The design control authority will not pursue authenticity verification of claims made by the offerer of product manufacturing experience with other Government or non-Government agencies. Unsubstantiated claims will not be considered in the waiver analysis process.

c. This waiver will be granted if and only if the design control authority (LILE) can establish the qualifications of the offerer through the evaluation of written inputs from the offerer or from previous knowledge of the offerer's capabilities or from previous experience with the offerer on similar item acquisitions. If there is any doubt about the offerer's capability, the offerer will be required to submit a pre-qualification article. There is no guarantee of qualification by similarity. LILE reserves the right to require a pre-qualification article of all offerers.

2. The current acquisition need not and will not be delayed in order to provide an offerer with an opportunity to meet the requirements for qualification waiver.

3. Maximum time for approval of qualification by similarity will not exceed 15 days.

SOURCE QUALIFICATION REQUIREMENTS

(PL98-525, SECTION 2319)

STOCK NR (NSN)1620-00-356-1678 PART NUMBER (P/N)4G52417-113A
NOUN: Latch-Upper drag Brace Assy AIRCRAFT:C-5

SECTION E. SIGNATURE BLOCK

Dale Rackham
LILE Weapon System Engineer

17 Aug 00
Date

Doug Wiser
LILE Lead Engineer

15 Sep 00
Date